Assessment of research and training quality 2003 - 2008

Report of the External Review Committee

SCHOOL FOR MENTAL HEALTH AND NEUROSCIENCE - MHeNS

November 2009

Faculty of Health, Medicine and Life Sciences
Maastricht University Medical Centre+ (Maastricht UMC+)
Maastricht University

Content

1] Introduction: the SEP

In accordance with the Standard Evaluation Protocol 2003 -2009 (SEP) all publicly funded research is evaluated once every six years by an external peer review committee conducting a site visit. Once every three years research units will produce a self-evaluation, alternating between preparation for the external evaluation and serving as an internal mid-term evaluation.
The three main aims of the SEP are improving the quality of research (through an assessment carried out according to international standards of quality and relevance), improving research management and leadership, and improving accountability, both internal (by the assessed research unit to its superiors within the university) and external (by the university to government and society).
The SEP requires the review committee to evaluate the research institute or school as a whole and the relevant parts of the institute (research programs or divisions) individually, on four main assessment criteria:

- Quality (international recognition and innovative potential);
- Productivity (scientific output);
- Relevance (Scientific and socio-economic impact);
- Vitality and feasibility (flexibility, management, and leadership).

With respect to the research programs of the school, the review committee presents its judgments on each of these main criteria also quantitatively, according to a five point scale: excellent (5), very good (4), good (3), satisfactory (2), and unsatisfactory (1). These ratings are specified in the SEP.
The review committee may be asked to answer additional questions of the board of the research organization.
The most important conclusions of the review committee, the reaction to these by the assessed research unit and the final conclusions by the board with respect to the future of the school will be published.

2] Research review MHeNS

This report presents the results of the evaluation of the research of the School for Mental Health and Neuroscience (MHeNS) by an external review committee (ERC). The evaluation was carried out in accordance with the SEP.
The review committee has been asked to evaluate also the training and supervision program of the school; MHeNS as coordinator of the European Graduate School of Neuroscience (EURON) may use the evaluation report for re-accreditation of EURON as a research school.
Following the guidelines of the SEP the self-evaluation report 2003 – 2008 was produced by MHeNS.
The school also provides proposals for internationally recognized scientists to take part in the review committee. In consultation with the Maastricht UMC+ Board of Directors, the Executive Board of Maastricht University agreed upon the self-evaluation report as well as the proposed chair and other members of the review committee.
The committee visited MHeNS on September 8 - 10, 2009.
The review committee consisted of:

- Prof. Dr. G.J. Ter Horst (professor in neurobiology of psychiatric disorders, UMC Groningen, chair);
- Prof. Dr. R.S. Kahn (professor in clinical and biological psychiatry, UMC Utrecht);
- Prof. Dr. C. Barrowclough (professor in clinical psychology, University of Manchester, UK)
- Prof. Dr. L. Bäckman (professor in geriatric psychology, Karolinska Institute, Stockholm, Sweden);
- Prof. Dr. H.A. Drexhage (professor in endocrine autoimmune diseases, Erasmus MC, Rotterdam).

Dr. E. Drenthe, Unit Academic Affairs of Maastricht University Office, was appointed secretary of the review committee. For personal reasons and illness, respectively, Professor Van den Bergh (ULC Bruxelles, Belgium) and Professor Van Broeckhoven (University of Antwerp, Belgium) were unable to fulfill their task. The committee greatly appreciates that Professor Drexhage was willing to take their place.
All members of the review committee signed a declaration and disclosure form to the effect that they would judge without bias, personal preference or personal interest, and that the judgment would be made without undue influence from the institute, the program or other stakeholders.

3] Information for the review committee and site visit

The assessment is based upon the self-evaluation report for the years 2003 -2008, provided by MHeNS. The self-evaluation report was sent to all members of the committee prior to the site visit.
The committee has received some additional questions by the Dean of the Faculty of Health, Medicine and Life Sciences (FHML).
In order to guarantee an independent assessment the committee members individually pre-assessed the divisions of MHeNS prior to the site visit. The chair divided the three divisions among the committee members according to their expertise: Division 1 by Bäckman, Division 2 by Barrowclough and Kahn, and Division 3 by Drexhage and Ter Horst. These pre-assessments were compared and discussed during the closed meetings of the committee on the last day of the site visit.

A site visit of MHeNS was scheduled on 8 – 10 September 2009 (Appendix 2).
In the evening of September 8 the review committee was welcomed by the Dean of the Faculty of Health, Medicine and Life Sciences (Prof. Dr. M. Paul), the scientific director of the school (Prof. Dr. H. Steinbusch), and the MHeNS Division leaders. The Dean and the scientific director mentioned in their introductory presentations the financial support of the Executive Board to three of the five schools of the faculty after an internal competition, to become (European) centers of excellence. In a closed meeting following these presentations, the committee decided to ask the faculty for additional information with respect to the position of MHeNS among the other schools of the faculty (input, output, bibliometric trend analysis).

The second day was devoted to presentations and discussions with division leaders and staff members of the school, followed by a poster session by post-docs and PhD students. During the morning of the third day, the Master and PhD programs of the school were presented and discussed. Representatives of the post-docs and PhD students were given the opportunity to present and discuss the work of the divisions. After lunch the committee held a meeting with the Dean of the Faculty of Health, Medicine and Life Sciences with respect to research management, policy and future perspectives.
The site visit was concluded with an oral presentation of the preliminary findings of the committee to the Dean and both directors, followed by a presentation to the three Division leaders.

4] Mission and goals of MHeNS

The mission of MHeNS concerns mental disorders and is summarized as to:

- improve the current knowledge of the processes underlying brain dysfunction and neuropsychiatric conditions by carrying out excellent scientific research on the continuum from basic neuroscience to clinical research and public health.
- stimulate and facilitate the collaboration between the various disciplines in these domains with the ultimate aim to improve health and health care.
- perform innovative research in fundamental and/or applied domains and publish the results in internationally high ranking journals.
- perform research in order to evaluate scientific results, products and techniques for applicability in clinical settings.
- develop an internationally recognized centre of excellence in the domain of Mental Health and Neuroscience.
- educate and train Master and PhD students to become independent researchers, and post-docs to become leading scientists.
- attract senior scientists with a translational vision.

The principal goals of MHeNS are to perform high impact translational neuroscience research and to educate Master and PhD students. Translational means practical collaboration between lab-based and hospital-based researchers, preferably in PhD projects combining animal and human approaches. To this end, MHeNS has developed a limited number of neuroscience focus areas, in which neuroscience and clinical domains are brought together in such a way that (i) maximum synergy will arise between groups, (ii) maximum use is made of existing expertise and (iii) animal and human lines are aligned. These areas are: Neurodegeneration, Neuromodulation, and Social Neuroscience. The establishment of these three translational research lines will link and integrate the research of the Divisions of MHeNS (Division 1 Cognitive Neuropsychiatry and Clinical Neuroscience, Division 2 Mental Health, and Division 3 Neuroscience) by the same cross-cutting themes, i.e. animal research, genetics, imaging, MTA and Health Services Research. The function of Divisions would then become administrative rather than conceptual in relation to a research theme.

This translational focus has been stimulated by the merger, in 2008, of the Faculty of Health, Medicine and Life Sciences (FHML) and the Academic Hospital Maastricht (azM) into Maastricht University Medical Centre (Maastricht UMC+). In order to facilitate translational collaboration, MHeNS and clinical partners in the academic hospital work together in the ZKO MHeNS (ZKO stands for Care chain for research and education). This unique structure has not been officially installed yet, but in practice is already operational under co-directorship of Prof. Dr. H. Steinbusch and Prof. Dr. J. van Os.
Another stimulating factor for translational focus is the portfolio research management (OPM) of the university. The university strives to have four to five prioritized lines of research in each faculty by 2010. The core criteria for this selection will be quality and productivity. As the standards for quality and productivity may differ across subject areas, each faculty will have to agree on the minimum conditions the research has to meet. In this respect, and as a result of the 2006 bibliometric analysis of its five schools, Maastricht UMC+ has formulated the following conditions: sufficient critical mass, sufficient PhD output, a limited number of research lines, and ability to obtain personal and other grants from NWO and EC FP5-7 programs.

At the central level, the university will select a number of areas from the faculty spearheads and support them by means of long-term investment agreements with the Executive Board. Within the prioritized lines of research, the university intends to establish a limited number of centers of excellence with which the university can compete at European level. One of the aims of this exercise is that the faculties and the Executive Board will jointly develop portfolio research management (OPM).
Maastricht UMC+, through the OPM funding initiative, has decided to stimulate MHeNS and invest an amount of €2 million over the next four years for the expansion of research capacity. The school adds to this an additional € 0.5 million. In order to meet the Maastricht UMC+ criteria of a centre of excellence, the MHeNS board has revealed that the additional OPM funding needs to be deployed with a view to (i) effectuate and consolidate strategic choices for expansion across a limited number of research themes (the above mentioned three focus areas with cross-cutting themes) and (ii) strengthen the layer of post-docs and assistant professors.
The request of the committee for material for comparison of the five faculty schools refers to this ambition.

5] Evaluation of MHeNS

Among the five schools of FHML, MHeNS is a medium-sized school, with a broad mission in the field of mental disorders. The focus of division 1 is the brain-behavior relations. It is one of the leading Alzheimer's centers in the Netherlands, and is well-known for its cohort studies. Division 2 focuses on gene-environment interactions and tries to improve the treatment and quality of life of mentally ill people. It has good access to patient cohorts and volunteers from the general population. The societal relevance is high, especially for the growing elderly population (Division 1) and the needs of people with severe mental health problems (Division 2). Division 3 has its emphasis on basic neuroscience research. It seeks to gain insight into the molecular and cellular mechanisms in disease areas like Alzheimer's disease, depression, movement disorders and pain. MHeNS intends to combine and focus the research of the three divisions by introducing three strategic goals: Neurodegeneration, Neuromodulation, and Social Neuroscience.

Thus, MHeNS is in a process of extensive renewal at both the institutional level (new Division leaders, new strategic goals for recombining and refocusing the research program) and the university level (the merger of the FHML with the azM, the introduction of the ZKO MHeNS).
Although the mission is broad, the output is impressive. According to bibliometric, and other output data like number of theses, funding policy and earning power of staff members, the development is positive. Also, the educational program of the school is outstanding, although the number of PhD students (more than 170 PhD's with an additional 50 external PhD students abroad) is quite high considering the number of staff (about 35 fte).
The number of PhD students will soon exceed the optimal PhD/supervisor ratio defined by the school. We expect this to have a negative impact on the quality of the PhD theses and number of publications in high impact peer-reviewed journals. Compared to other schools of the faculty, the review committee has no doubt that MHeNS is in a favorable position to fulfill the criteria of the faculty to develop itself as a centre of excellence in Europe. The shared expertise, knowledge and infrastructure of the research school EURON, coordinated by MHeNS, will facilitate this goal.

As previously mentioned, MHeNS is a medium-sized school, with a rather broad mission. Especially Divisions 1 and 3 need more focus. The leadership of MHeNS is faced with difficult adjustments, not only within MHeNS but also in positioning itself in the new setting of the University Medical Center. As to the latter, it was decided that both the current director of MHeNS (Prof. Dr. H. Steinbusch) and Prof. Dr. J. van Os are members of the ZKO. This dual leadership is ideal for strengthening the position of MHeNS in the UMC as well as in the faculty FHML. Within the setting of an UMC the opinion of a clinician will have more impact and be better heard than that of a basic scientist. But for the implementation of PhD and master programs and development of European training programs in the setting of an UMC and the faculty FHML different qualifications are needed. The current director of MHeNS has utilized excellently all available opportunities and developed an international training program for PhD and master students that has no equal in the Netherlands. In addition, preclinical investigators often will not wholeheartedly accept clinicians as leaders of their non-clinical research programs, which are the main focus of Division 3. This could hamper future development of MHeNS, its cohesion and possibilities for translational research and therefore the ERC strongly supports the already existing dual leadership for MHeNS.

The ERC recommends to restructure the research programs of MHeNS around one central theme.

For several reasons, Division 1 has no continuous research line over the past ten years. It is well known for its well organized and extensive databases and cohort studies. Its Alzheimer's program is internationally very competitive. For the future development of Division 1, it will be important how the vacant chair of neurology is filled in and whether or not this will or can strengthen the collaboration/interaction with Division 2. The intended translational line for Alzheimer's disease that is in development with Division 3, which has Alzheimer transgenic animals, is different from that in other universities and may be a niche.
Division 2 is a small but strong division, with predominantly young researchers. By focusing on the gene-environment line Division 2 has found an interesting area where it already has gained an international reputation. However, to become world leading in this field Division 2 will need additional resources to appoint a senior geneticist and to develop in-house imaging facilities. For the latter, the Division currently relies on Division 3 and other universities. Division 3 has all the facilities for developing animal models in neuroscience.

The completion of a proposed new animal facility of Maastricht UMC+ will be essential for future development of Division 3 to be able to improve the technological expertise. This fast growing division should put more emphasis on improving cohesion and collaboration by implementing a reduction of the number of research lines. They should also try to increase the collaboration with clinicians to make optimal use of opportunities for access to selective patient groups to be able to meet the goal of MHeNS with respect to putting more emphasis on translational research.

MHeNS produces many publications, particularly the productivity and quality of output of Division 2 is excellent. The quality of the output of all Divisions is significantly above world levels for the respective fields. The ERC is positive about the process set in motion by the leadership of MHeNS to increase the number of high-impact publications. Increased collaboration between the various Divisions is important for this process, because this goal can only be achieved with multidisciplinary approaches. The first signals of improvement of quality are already visible so the strategy of the leadership of MHeNS is effective.

The review committee recommends the faculty to allocate more staff to MHeNS, and the MHeNS leadership should put emphasis on identification and particularly the implementation of a central research theme. The gene-environment interaction has developed as a strong profile in Division 2, and therefore we suggest to make "gene-environment interaction" a common theme for all divisions of MHeNS. This theme will be a unique selling point for MHeNS and has not been developed to this level anywhere else in the Netherlands.

Division 1 with its excellent cohort studies could perfectly fit into this profile. Division 3 already has several research lines that make use of transgenic animal models and can easily adopt to a central gene-environment interaction theme of the school without radically altering the existing structures. It is the opinion of the ERC that this proposed shift of research focus will help MHeNS to establish itself as a world leading center in the field. To become a real centre of excellence, MHeNS not only will need a focused program but also support of a senior geneticist and imaging experts to achieve its goal for improving translational research from the clinic to basic neuroscience and back.

The ERC recommends a merger of Division 1 and Division 2. For this merger to be successful, the profile for the new chair in (clinical) neurology will be particularly important. The ERC recommends to recruit for the department of Neurology a neurologist with expertise in neuroimaging and/or neurogenetics. We recommend the leadership to consider the possibility of developing Division 3, which brings together basic neuroscience research, into a department of Neuroscience. Every top university in the world has a department of Neuroscience and as the restructuring of MHeNS has been set in motion it would be relatively easy for the faculty FHML to implement this common standard in the University of Maastricht. This strategy would help to promote the visibility of preclinical research in MHeNS and make it more attractive for talented preclinical investigators to come to work at MHeNS.

6] Research training program

The current leadership of MHeNS has developed the research training program excellently, making optimal use of the geographical location and opportunities for EU funded programs. The review committee was impressed by the enthusiastic presentations of the research training program by staff and PhD students. Together with the clear description in the self-evaluation report, this gives a very good picture of the activities of MHeNS in both master programs (regular masters and honors programs of the FHML and FPN, research masters in cognitive and clinical neuroscience, international master in affective neuroscience, research master A-KO, clinical molecular science program, and intended European master in neuroscience) and PhD programs. In addition, the eleven partners of the international research school EURON offer specialized PhD programs.
The quality of the PhD program and supervision is very good. Considering the different background of the PhD students, the efficiency of the PhD program is also good.

The number of regular and clinical PhD students of MHeNS is about 170, the number of additional external PhD students abroad is about 50. Because, as a rule, 1 fte staff can supervise no more than 4 PhD students, and this situation has already been reached, the review committee foresees that the quality of the PhD program could go down with an expected further growth of PhD students. Therefore, it is critical to increase the number of supervisory senior staff to maintain an optimal PhD student/supervisor ratio as defined by MHeNS. Otherwise, MHeNS leadership probably will have to decide to selectively reduce the number of PhD students. This will particularly affect the most successful research groups and supervisors. In addition, the ERC advices MHeNS to appoint a full-time PhD coordinator. Currently MHeNS allocates for this function only 0.5 fte but more effort should be put into the coordination of different modules in the training program, stimulation of interaction of PhD students from different divisions, evaluation of the progress of PhD students and counseling.

The review committee agrees that the PhD program of EURON is very important for PhD students, for mobility, sharing expertise and knowledge, knowledge transfer, learning techniques, delivering of uniform PhD degrees with a EURON certificate, and to execute the Bologna process.
The offer of specialized PhD courses may be better tailored for some PhD students, thus avoiding their participation in sometimes time-consuming master courses.

ERC already noted that, with respect to the overall research program, the coordination and coherence between the Divisions must improve. This also applies to the PhD training program wherein communication between students from the different divisions could be improved.

7] Overall Assessment

Overall assessment of Divisions:

	Program	Quality	Productivity	Relevance	Vitality
Div 1	4	4	4	4	4
Div 2	4.5	4.5	5	5	5
Div 3	4	4	4	4	4

Overall assessment of MHeNS: very good (4)

8] Summary of ERC recommendations

School MHeNS:

- Maintain current dual leadership of MHeNS (Van Os and Steinbusch)
- Structure MHeNS research around one central theme "Gene-Environment Interaction"
- Focus and adjust research in Division 1 and Division 3 to fit to the central theme
- Merge Divisions 1 and Division 2
- Develop Division 3 to a Department of Neuroscience
- Improve cohesion and collaboration between the divisions
- Allocate more research staff to MHeNS to build out the international reputation of the school and maintain optimal supervisor/PhD student ratio's
- Implement plans to build a new animal facility
- Appoint a new head of the Department of Neurology with a background/expertise in neurogenetics or neuroimaging
- Appoint a geneticist and neuroimaging expert for Division 2

MHeNS training program:

- Maintain optimal supervisor/PhD student ratio's and appoint more staff (ideally 1:4)
- Appoint a full-time PhD coordinator
- Improve coordination and cohesion between training programs of the different divisions of MHeNS
- Improve communication and interaction between PhD students in the different divisions of MHeNS

Appendix 3 / Comments on the Peer Review Report of MHeNS from the Board of the Faculty of Health, Medicine and Life Sciences/Maastricht University Medical Centre+

The Board of the Faculty of Health, Medicine and Life Sciences/Maastricht University Medical Centre+ has taken notice of the Peer Review Report in which the research of the School for Mental Health and Neuroscience (MHeNS) over the period 2003-2008 was evaluated.
The board wishes to make the following observations:

- The Board is pleased with the quality assessment of the research: divisions 1 and 3 are assessed as very good; division 2 very good to excellent.

- The Board emphasizes that the ZKO is the structure which intends to integrate the activities of the School with those of the Academic Hospital. In this sense the Board acknowledges the dual leadership.
However management of research and training and education of PhD students and master students is the sole responsibility of the scientific director of the School, who must, of course, align with the scientific strategy of the ZKO.

- The Board considers the recommendation to structure the research of MHeNS around one theme as challenging and innovative. In perspective of the recommended fundamental changes in the organization of MHeNS: merger of divisions 1 and 2, develop division 3 to a department of Neuroscience, and improve cohesion and collaboration between the divisions, the Board will work out a plan to restructure MHeNS.

On behalf of the Board,

drs. G.J.H.C.M. Peeters,
CEO

prof.dr. M. Paul,
dean/vice chairman

Program External Review Committee (ERC) MHeNS / Tuesday September 8 – Thursday September 10, 2009

Tuesday September 8

Location: Kruisherenhotel Maastricht

17.00 – 17.30	Closed meeting of ERC
17.30 – 18.30	Installation of the ERC by the Dean of the Faculty of Health, Medicine and Life Sciences (FHML), Prof. Dr. M. Paul; Introduction of School for Mental Health and Neuroscience (MHeNS) by Prof. Dr. H. Steinbusch (scientific director); Overview program ERC
18.30	Drinks and dinner with Dean of FHM Land Board of School

Wednesday September 9

Location: Akenzaal UNS 40 (open meeting for all MHeNS members)

09.00 – 09.15	Introduction MHeNS research program by Prof. Dr. H. Steinbusch
09.15 – 09.45	Presentation Division 1 Cognitive Neuropsychiatry and Clinical Neuroscience by Prof. Dr. F. Verhey
09.45 – 10.00	Discussion
10.00 – 10.30	Presentation Division 2 Mental Health by Dr. I. Myin-Germeys
10.30 – 10.45	Discussion
10.45 – 11.00	*Coffee Break*
11.00 – 11.30	Presentation Division 3 Neuroscience by Prof. Dr. M. De Baets
11.30 – 11.45	Discussion
12.30 – 13.00	*Lunch*
13.00 – 15.00	Presentations by staff members: Division 1: Dr. R. van Oostenbrugge, Dr. M. van Boxtel, Dr. C. van Heugten; Division 2: Dr. B. Rutten, Dr. M. Wichers, Dr. K. Schruers
15.00 – 15.15	Coffee Break
15.15 – 16.15	Presentations by staff members: Division 3: Dr. J. Prickaerts, Dr. F. van Leeuwen, Dr. P. Martinez, Dr. Y. Temel
16.15 – 17.15	Poster session (with 72 posters) by post-docs and PhD students
17.15 – 18.15	Closed meeting of ERC
19.00	*Dinner*

Thursday September 10

Location: Greepzaal UNS 60

9.00 – 10.30	Presentation MHeNS Educational Platform: Master Program: Dr. J. Prickaerts (combined FPN/FHML) and Dr. G. Kenis (FHML/MLW); PhD Program: Dr. N. Nicolson (local PhD program) and Dr. N. Senden (international PhD program)
10.30 – 11.00	*Coffee Break*
11.00 – 12.15	Interviews and discussions with representatives of post-docs and PhD students: Division 1: R. Drijgers, S. Köhler, Dr. P. Aalten; Division 2: P. Habets, R. Küpper, Dr. T. Lataster Division 3: Dr. R. Deumens, E. Strackx, Dr. M. Losen
12.15 – 13.30	*Lunch and closed meeting ERC*
13.30 – 14.00	Meeting* with Prof Dr. M. Paul, Dean of the FHML, about Collaboration of FHML and azM within Maastricht UMC+-ZKO "The future translational structure of the School"
14.00 – 14.30	Closed meeting of ERC
14.30 – 15.00	Feedback to Prof. Dr. M. Paul, Prof. Dr. H. Steinbusch and Prof. Dr. J. van Os
15.00 – 15.30	Feedback to Division Leaders and scientific director of School

*Due to illness Drs. G. Peeters, chair of Maastricht UMC+, was unable to participate in the meeting at 13.30 - 14.00 hours.